(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 6-14, 23, and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bowman et al. (US 6,169,986) in view of Ng.

Bowman et al. shows all of the limitations of the claims except for specifying the use of the search system with a group of stores in an e-mall.

Bowman et al. shows, figure 1, a system and method for refining search queries. In accordance with the invention, the related terms are generating using query term correlation data that is based on historical query submissions to the search engine. The query term correlation data ("correlation data") is preferably based at least upon the frequencies with which specific terms have historically been submitted together within

the same query. In accordance with one aspect of the invention, the correlation data is

stored in a correlation data structure (table, database, etc.), which is used to look up

related terms in response to query submissions. The data structure is preferably

generated using an off-line process, which parses a query log file, but could

alternatively be generated and updated in real-time as queries are received from users.

Thus, for example, in the context of a search engine of an online merchant (e-shop), the

search engine tends to suggest related terms that correspond to the current best-selling

products. Notice the Amazon.com book example. The attributes or key words can be

author, subject or style.

In a preferred embodiment, each entry in the data structure is in the form of a key

term (attribute) and a corresponding related terms list. Each related terms list contains

the terms, which have historically appeared together (in the same query) with the

respective key term with the highest degree of frequency. The data structure thus

provides an efficient mechanism for looking up the related terms for a given query term.

To generate a set of related terms for refining a submitted query (the "present

query" or first customer query), the related terms list for each term in the present query

is initially obtained from the correlation data structure. The related terms, which remain

are terms, which have previously appeared, in at least one successful query

submission, in combination with every term of the present query. Thus, assuming items

have not been deleted from the database being searched, any of these related terms

can be individually added to the present query while guaranteeing that the modified

query will not produce a NULL query result. To take advantage of this feature, the

related terms are preferably presented to the user via a user interface that requires the user to add no more than one related term per query submission.

One aspect of the invention is thus a method of assisting users in refining search queries. The method is performed by a computer system that implements a search engine that is accessible to a community of users. The method comprises receiving a search query submitted by a user (subsequent search attributes), wherein the search query comprises at least one term. The method further comprises using a history of search queries (adding attributes to correspondence table) submitted to the search engine over a selected period of time by the community of users to identify at least one refinement to the search query, and suggesting the at least one refinement to the user.

Another aspect of the invention is a system for assisting users in refining search queries submitted to a search engine. The system comprises a first program module, which processes query logs of the search engine to generate correlation data that reflects frequencies of occurrences of query terms (recording new correspondence relationships) within the same query. The system further comprises a second program module, which uses at least the correlation data to suggest refinements to search queries received from users.

The invention further includes a method of facilitating the refinement of search queries. The method comprises receiving a search query submitted by a user, and identifying a plurality of refined search queries, each of which comprises all terms of the query submitted by the user and an additional term.

Column 11, lines 35-44 show the detection of a purchase of a suggested product.

Ng teaches, figure 1, a system of e-shops sharing resources in an e-mall in order
to increase revenue. Bottom of column 1 teaches a product search for a group of stores
in an e-mall.

Based on the teaching of Ng, it would have been obvious to one of ordinary skill
in the art, at the time the invention was made, to modify Bowman et al. search system
such that it is use for a product search for a group of stores in an e-mall in order to
increase revenue.

**Claims 15-17, and 25 are rejected under 35 U.S.C. 103(a) as being
unpatentable over Bowman et al. (US 6,169,986) and Ng I further view of Bauer et
al.**

The combination system of Bowman et al. and Ng, as discussed above, shows
all of the limitations of the claims except for specifying detecting contradicting data,
defining false correspondence, and deleting the false correspondence.

Bauer et al. teaches a database synchronizer, which determines conflict
detection (column 25, lines 12-13) and runs programs (column 25, lines 39-54), which
include defining "false" data and deleting it in order to properly combine two sets of
data.

Based on the teaching of Bauer et al., it would have been obvious to one of
ordinary skill in the art, at the time the invention was made, to modify the combination
system of Bowman et al. and Ng to incorporate the synchronization method of Bauer

including conflict detection and defining "false" data and deleting it in order to properly

combine two sets of data.